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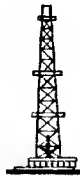
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SUMMARY

MIDDLE EAST OIL DEVELOPMENTS



2nd EDITION-1948

ARABIAN AMERICAN OIL COMPANY

SUMMARY OF
MIDDLE EAST OIL DEVELOPMENTS



2nd EDITION-1-48

SUMMARY OF MIDDLE EAST OIL DEVELOPMENTS

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Prepared by
Arabian American Oil Company

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SUMMARY OF MIDDLE EAST OIL DEVELOPMENTS

GENERAL SURVEY

(See map in back)

As thus far explored and developed, the oil region of major importance in the Middle East lies in and adjacent to the great basin occupied by the Tigris and Euphrates Rivers and the Persian Gulf. It covers portions of Iran, Iraq and Saudi Arabia and the smaller Sheikdoms of Kuwait, Bahrein and Qatar.

That is the picture today. It is possible, however, that oil production may later be discovered on the other side of the great Iranian mountain ranges in northern Iran, and west of the region above described in Syria, Lebanon, Palestine and Trans-Jordan. Exploration and test drilling are either under way or anticipated in those areas and on the island of Cyprus. Also remaining to be tested are the Trucial Coast Sheikdoms, Oman, Dhofar, Muscat, and Hadhramaut, all lying in the southern portion of the Arabian Peninsula.

Oil has been produced in Egypt for a great many years but not in important quantities. Active exploration is still under way in that country. The western portion of Saudi Arabia is not regarded as having oil potentialities.

Great Britain, the United States, France and Holland are all substantially represented in Middle East oil developments. On the northeastern side of the Persian Gulf-Mesopotamian basin lies the important concession in southwest Iran held by a British company, while, on the opposite side, the concessions in Saudi Arabia and Bahrein are held by American interests. In between, the concession covering Kuwait is held by a company half British and half American owned, and the concessions in Iraq by companies jointly owned by British, French, Dutch and American groups.

The same international group represented in Iraq, also own companies holding concessions or exploration rights in Cyprus, Syria, Lebanon, Palestine

and Trans-Jordan and, to the southward, in Qatar, the Trucial Coast, Oman, Dhofar, and Hadhramaut.

There are two "neutral zones" along the northern border of Saudi Arabia. The westerly of these is jointly shared by the governments of Iraq and Saudi Arabia, the easterly one by Kuwait and Saudi Arabia. Arabian American Oil Company holds concession rights on the undivided half interest of the Saudi Arabian Government in both zones. The Basrah Petroleum Company Ltd. holds the Iraq interest in the westerly one. The Kuwait interest in the so-called Kuwait neutral zone has not yet been leased, although several companies, both British and American, have been negotiating for it.

The U.S.S.R., which holds no interest in the concessions southwest of the Iranian mountain ranges, negotiated a proposed concession in April, 1946 covering a portion of northern Iran adjacent to the Caspian Sea, to be operated by a company owned 51% by the U.S.S.R. and 49% by Iran. The concession was rejected by the Iranian Parliament (Majlis) in October, 1947. Although in the same country as the British-owned Anglo-Iranian concession in southwest Iran, the area concerned belongs in a different geographic and economic province as regards the movement and use of oil. In other words, the natural outlet for oil exports from northern Iran would be into or through Russia, which is strictly not the case as regards oil produced in southwest Iran or the Arabian countries.

In the opinion of most geologists, there are very large undeveloped areas within Russia itself that are capable of abundantly supplying the requirements of that country and which offer much greater promise for substantial oil production than the proposed concession in northern Iran.

Historical Highlights:

Oil exploration in the Middle East began in the early part of this century in southwest Iran, and oil was discovered there in 1908. By 1913 the oil developed in this area had assumed sufficient importance to induce the British



COMPARATIVE AREAS

TEXAS 267,339 SQ. MILES
 CALIFORNIA . . . 158,693 SQ. MILES
 TOTAL 426,032 SQ. MILES

ARAMCO CONCESSION AREA

TOTAL 440,000 SQ. MILES



Government to acquire a 51% interest in the Anglo-Iranian Oil Company. (This interest has since been increased to about 56%.)

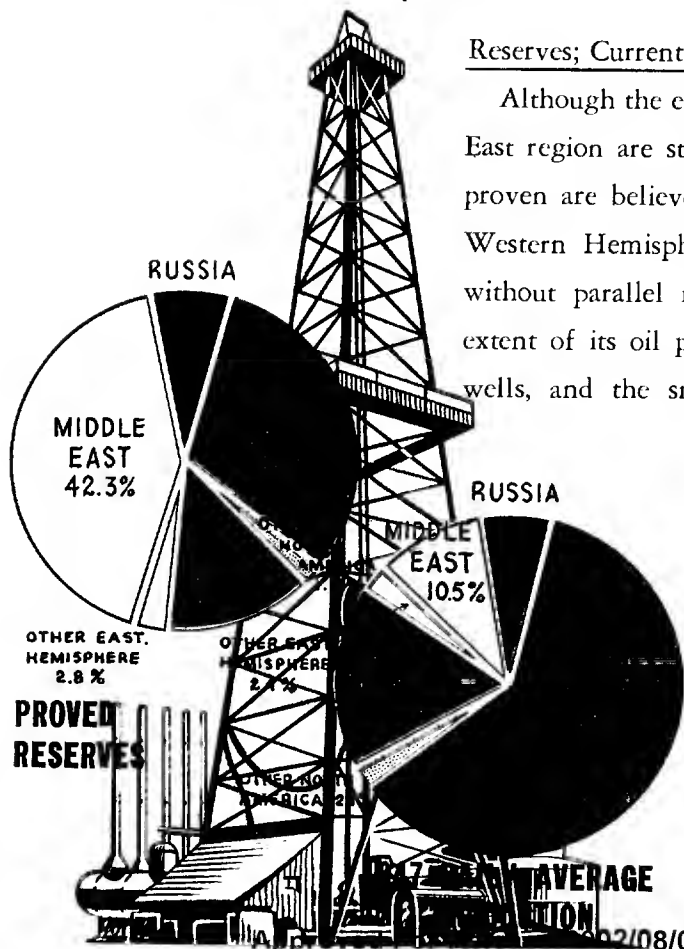
The Kirkuk field in Iraq was discovered in 1927 and pipelines to the Mediterranean Sea were completed in 1934. The wholly-American enterprises entered the Persian Gulf region in the early 30's, discovering oil in Bahrein in 1932 and in Saudi Arabia in 1938 (some oil was discovered in Saudi Arabia in 1935 but not in commercial quantities). Although Iran and Iraq produced substantial quantities of oil before World War II, the real importance and magnitude of Middle East oil resources were not fully appreciated until recent years. World wide attention was drawn to them by the rapid increase in Iranian production and refining facilities as a war measure, and by the spectacular increase in Saudi Arabian production during 1946 and 1947, the development of which had been retarded by lack of facilities during the first few years of the war.

Reserves; Current and Future Production:

Although the exploration and development of the Middle East region are still in an early stage, the reserves already proven are believed to equal or exceed those of the entire Western Hemisphere (see chart). The region has been without parallel in previous oil experience for the large extent of its oil pools, the large average magnitude of its wells, and the small number of failures in wildcatting.

Although exploration has been difficult, and has required the most scientific technique known to the industry, a large number of favorable structures have been found which, although yet untested, promise greatly to augment present proven reserves as the need arises.

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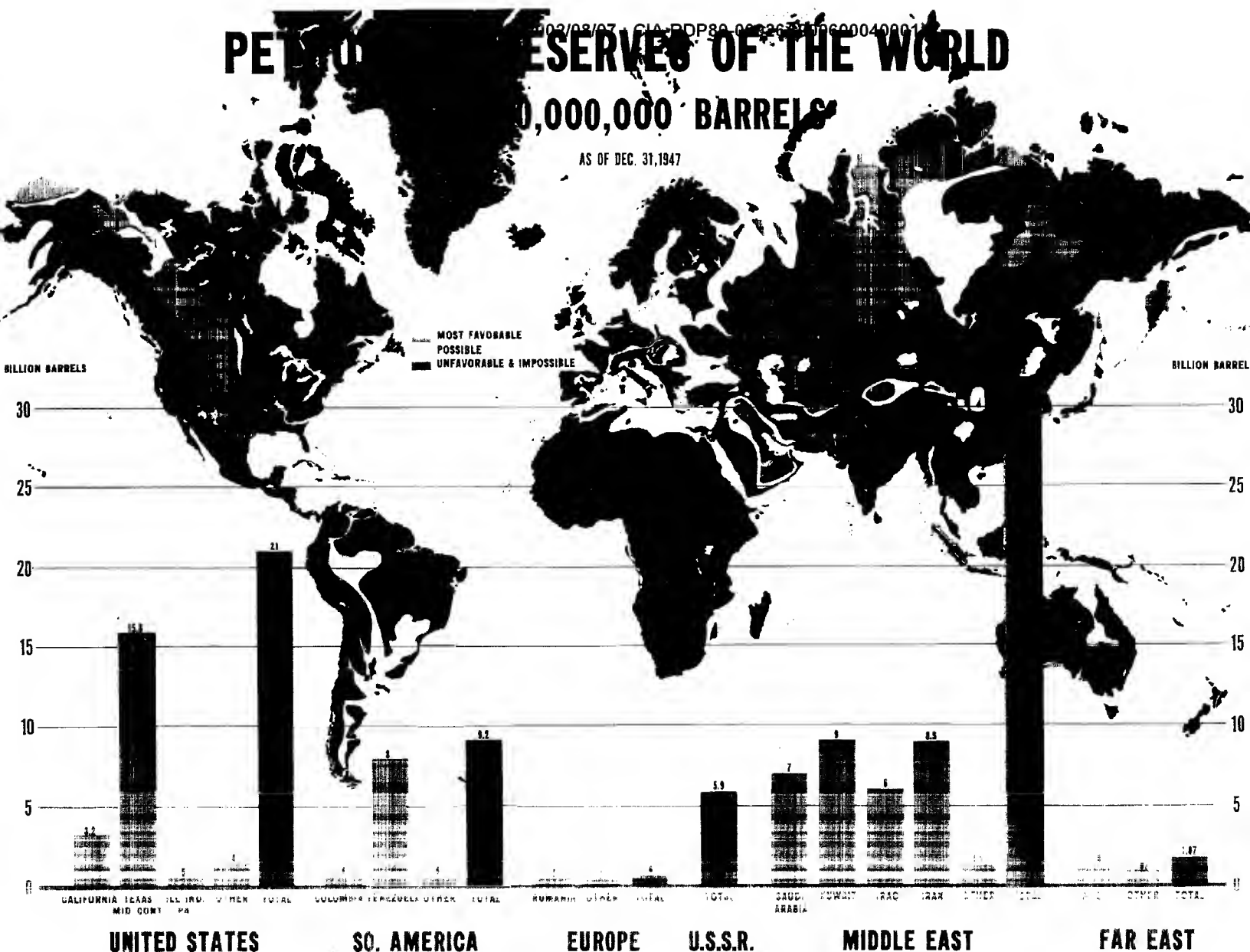


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PETROLEUM RESERVES OF THE WORLD

10,000,000 BARRELS

AS OF DEC. 31, 1947



Total production from the Middle East is in the order of 1,000,000 barrels daily in the middle of 1948 as compared to an average of 325,000 barrels in 1939. The output is expected at least to double within the next few years with the completion of large pipelines projects, either under way or in preparation, for the movement of oil from Saudi Arabia, Iraq, Iran and Kuwait to the eastern shores of the Mediterranean. The oil companies are planning to invest hundreds of millions of dollars in these facilities and the development of production and ancillary facilities to support them in order to move Middle East oil into Europe, Asiatic and other world markets where it is badly needed to relieve a present situation of severe shortages.

The trend of daily average production in the Middle East is shown in the following table, (thousands of barrels).

	<u>Iran</u>	<u>Iraq</u>	<u>Bahrein</u>	<u>Saudi Arabia</u>	<u>Kuwait</u>	<u>Total</u>
1936	171	81	13			265
1937	213	86	21			320
1938	215	87	23			325
1939	214	79	21	11		325
1940	181	49	20	14		264
1941	139	29	18	12		198
1942	198	48	17	12		275
1943	204	69	18	13		304
1944	279	82	19	21		401
1945	358	90	20	58		526
1946	402	92	22	164	40	720
1947	420	92	25	246	49	832
Middle 1948	425	92*	30	410	100	1057

*Iraq production temporarily reduced to about half this figure because of disturbances in Palestine.

General Economic Aspects: Western Europe and other regions which have not been so fortunate as the United States in the ready availability of oil supplies will doubtless benefit greatly by the abundance of oil found in the Middle East. The United States will likewise benefit from the development of a new source of oil to relieve the drain on Western Hemisphere reserves in supplying

DAILY AVERAGE CRUDE OIL PRODUCTION

MIDDLE EAST

THOUSAND
BARRELS

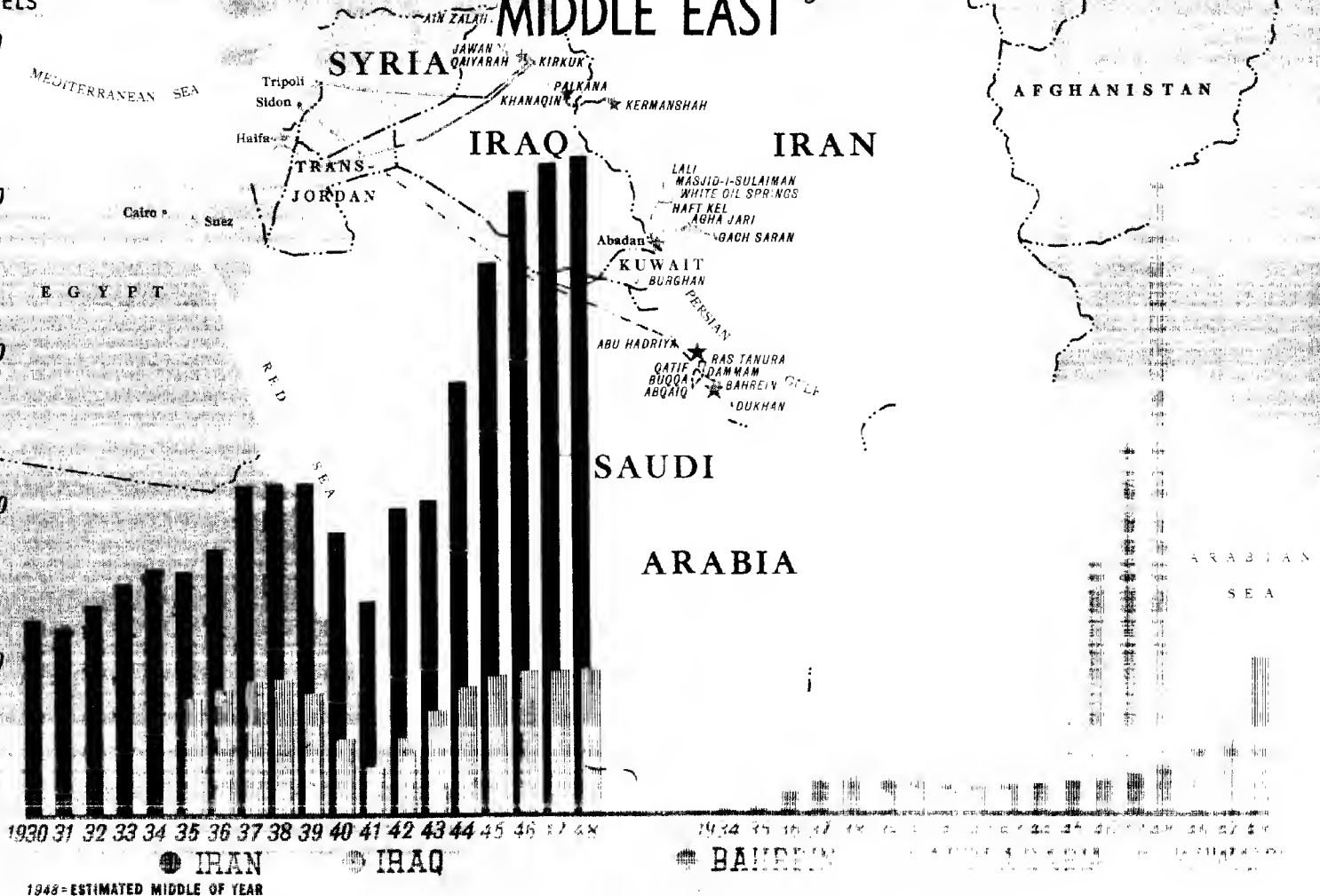
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400

300

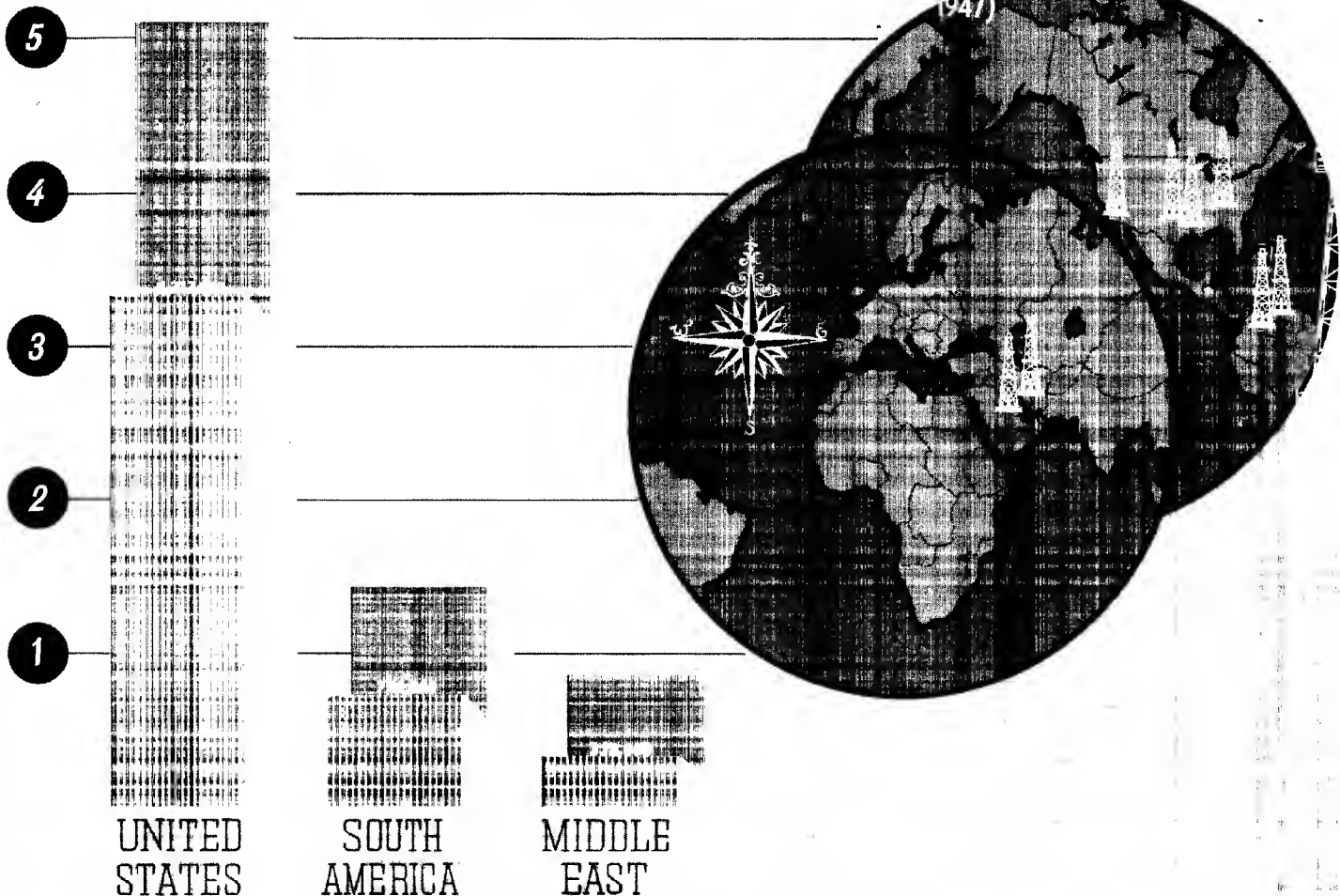
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100



DAILY AVERAGE CRUDE OIL PRODUCTION

MILLIONS OF
BARRELS DAILY



whom they live and deal, they have promoted the welfare and education of their local employees and have recognized that, to be successful, the enterprises must be of fair and lasting benefit to the local people as well as to themselves and to the countries who need the oil.

Returns to Governments:

Middle East Governments receive a direct benefit from oil production in the form of cash royalty payments. In some instances returns include payments in lieu of taxes and other payments. For example:

<u>Company and Country</u>	<u>Royalty and Other Payments</u>	<u>Approximate Equivalent in Dollars</u>
A. I. O. C. Iran	4 shillings sterling per ton; plus payment per ton in lieu of taxes; plus premium according to gold price in London above £6 per ounce; plus a sum equal to 20% of distribution to ordinary shareholders over and above 5%	Total Approximately 20 to 22 cents per barrel
I. P. C. Iraq	4 shillings gold per ton, paid in sterling according to price of gold in London on day of payment	\$1.65 per ton .22 per barrel
Aramco Saudi Arabia	4 shillings gold per ton, or equivalent in dollars or sterling	\$1.65 per ton .22 per barrel
Bapco Bahrein	3½ rupees per ton	\$1.05 per ton .14 per barrel
Kuwait Oil Co. Kuwait	3 rupees per ton plus ¼ rupee per ton in lieu of taxes.	.975 per ton .13 per barrel

According to estimated production, such direct payments to the respective governments accruing during 1948 can be expected to approximate the following amounts, expressed in terms of dollars at present rates of exchange:

Iran	\$33,000,000
Iraq	7,250,000
Saudi Arabia	28,000,000
Bahrein	1,500,000
Kuwait	4,750,000

In addition, many of the governments receive cash rental payments on undeveloped portions of their countries held under concession. Iraq, for example, annually receives £400,000 gold (\$3,295,000) from the Mosul and Basrah concessions.

Apart from these direct payments to governments, large local expenditures by the oil companies on wages, supplies, etc. afford a substantial benefit to the various national economies. For example, the local wages bill of the Anglo-Iranian in Iran exceeds £1,000,000 (\$4,000,000) monthly; that of Aramco in Saudi Arabia averages about \$1,500,000 monthly.

The direct and indirect benefits to the countries concerned will, of course, increase as operations and production are expanded.

Profits of Oil Companies: The oil companies operating in the Middle East are still faced with enormous capital investments before they can round out a balanced picture of available daily production and oil handling facilities commensurate with the potential oil available in the ground and potential demand. In view of the unsettled conditions existing in the world today and the unusual risks attendant upon investments of this kind, they cannot be sure of making any ultimate net profit until their investment has been repaid.

Until recently, the Arabian American Oil Company, for example, has paid no dividends in the fourteen years of its operation in Saudi Arabia notwithstanding that what started and continued for several years as a highly speculative venture



Traditionally the Western Hemisphere has supplied crude oil and products to make up the Eastern Hemisphere's deficiency. With world consumption in '1938 at 5.45 million B.P.D. the West moved 688,000 B.P.D. to the East. The U.S.A. imported 170,000 B.P.D. and exported 447,000 B.P.D. The Middle East exported 237,000 B.P.D. World War II focused attention on the Middle East and started a trend against the history of world supply.

In 1947 with world consumption risen to 8.5 million B.P.D. the Western Hemisphere was still exporting 664,000 B.P.D. Eastward. Consumption in the U.S.A. was up 75% over 1938 and we became net importers for the first year since 1925. Eastern Hemisphere consumption, due to shortage of supply, was up only 5%. Middle East production rose to 830,000 B.P.D. The Western Hemisphere exported 583,000 B.P.D. to Europe; the Middle East added 286,000 B.P.D. more.



eventually proved very successful. Its owners were obliged to provide it with new capital until the end of 1945, and while it is now making substantial earnings, the bulk of these earnings are being "plowed back" and will continue to be "plowed back" for several years to come.

The Anglo-Iranian Oil Company, the oldest company in the field, showed profits after taxes of £9,624,938 in 1946 as compared to £5,792,447 in 1945. Dividends declared against 1946 earnings amounted to £6,041,250, which was over £1,000,000 less than its royalty payments to the Iranian Government covering the same period.

No figures are presently available as to earnings of other companies operating in the Middle East.

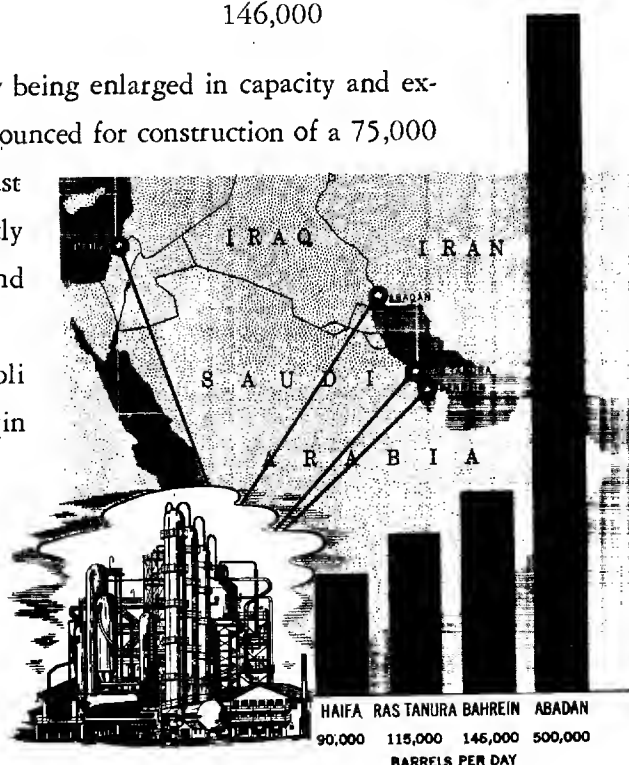
Refineries: The major refineries in the region are:

<u>Country</u>	<u>Location</u>	<u>Capacity (barrels per day)</u>
Iran	Abadan	500,000
Palestine	Haifa	90,000
Saudi Arabia	Ras Tanura	115,000
Bahrein	Bahrein	146,000

All of the above refineries are gradually being enlarged in capacity and expanded in functions. Plans have been announced for construction of a 75,000 barrel refinery on the Mediterranean Coast by Mediterranean Refining Company, jointly owned by Socony-Vacuum Oil Company and California Texas Corporation.

Smaller refineries are located at Tripoli (Lebanon); Kermanshah (Iran); Khanaqin (Iraq).

[8]



Major Pipeline Projects: There are three major projects planned for movement of Middle Eastern oil to the Levant Coast of the Mediterranean:

1. The Iraq Petroleum Company is now constructing or planning to construct two 16-inch pipelines from the Kirkuk field adjacent to the 12-inch lines which have been in operation since 1934. The new line to Haifa is expected to be completed in 1949, the one to Tripoli by 1951.

2. The Trans-Arabian Pipe Line Company has commenced the construction of a 30-31 inch pipeline from the Saudi Arabian oil fields to the Levant Coast, expected to be completed in 1949.

3. A 34-inch line is proposed from Iran to the Mediterranean to be built by Middle East Pipeline Company, jointly owned by the Anglo-Iranian Oil Company and the Standard Oil Company (New Jersey) and Socony-Vacuum Oil Company. The latter two American companies have agreed to take substantial quantities of Iranian crude oil after the project is completed. Kuwait production is also to be tied into this line.

There has been some discussion of an additional pipeline from Kuwait to the Mediterranean, to be built by Gulf Oil Company and the Shell group.

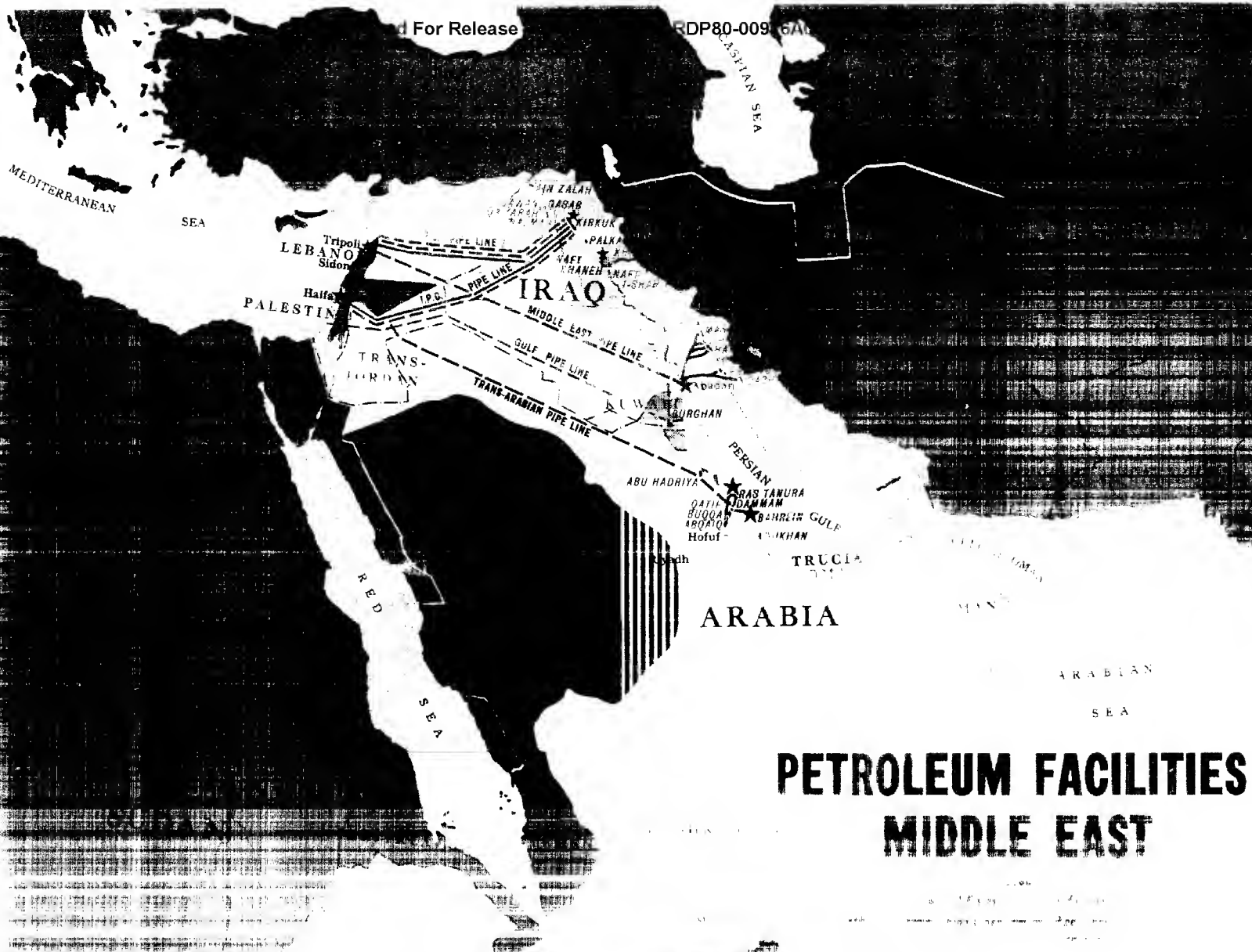
Relations between Companies: The companies holding concessions in the separate countries operate entirely independently of each other notwithstanding that there is some overlapping in ownership, viz:

The Anglo-Iranian Oil Company, which exclusively holds the concession rights in southwest Iran, owns a 50% interest in the Kuwait Oil Company (operating in Kuwait) and a 23 $\frac{3}{4}$ % interest in the Iraq Petroleum Company and its "sister" companies (see below). It also holds a half interest in Consolidated Refineries, Ltd., which owns and operates a 90,000 barrel refinery at Haifa.

The Standard Oil Company (New Jersey) and Socony-Vacuum Oil Company, which jointly own 23 $\frac{3}{4}$ % of the Iraq Petroleum Company and its

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PETROLEUM FACILITIES MIDDLE EAST

"sister" companies, have all but completed arrangements to acquire interests of 30% and 10% respectively in Arabian American Oil Company (operating in Saudi Arabia) and Trans-Arabian Pipe Line Company, which up to the present have been jointly owned by Standard Oil Company of California and the Texas Company.

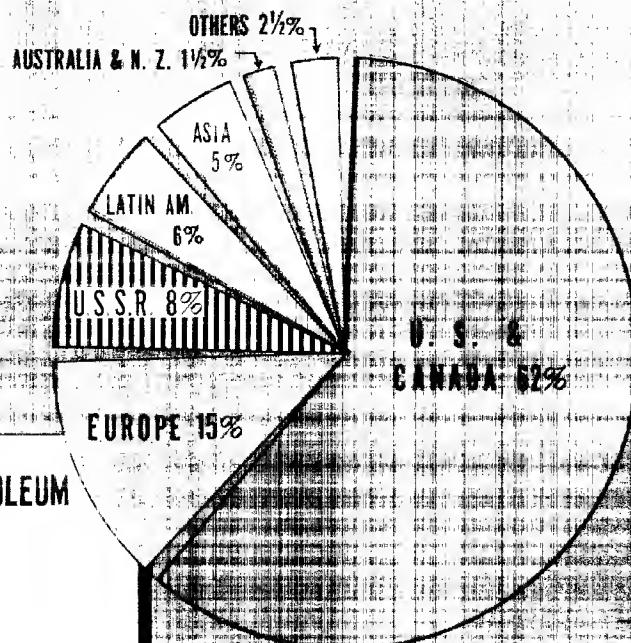
The British, American, French and Dutch owners of the Iraq Petroleum Company, Ltd. (see page 18) are also the owners of two other companies, Mosul Petroleum Company, Ltd. and Basrah Petroleum Company, Ltd., holding separate concessions in Iraq. They are also the owners of Petroleum Concessions, Ltd., which directly holds an exploration permit in Hadhramaut and which wholly owns subsidiary companies holding rights in other Middle East countries as follows:

<u>Company Name</u>	<u>Country</u>	<u>Nature of Rights</u>
Petroleum Development (Cyprus) Ltd.	Cyprus	Exploration Permit
Lebanon Petroleum Company, Ltd.	Lebanon	Exploration Permit
Petroleum Development (Palestine) Ltd.	Palestine	Exploration Permits
Syria Petroleum Company, Ltd.	Syria	Concession
Transjordan Petroleum Company, Ltd.	Trans-Jordan	Concession
Petroleum Development (Qatar) Ltd.	Qatar	Concession
Petroleum Development (Trucial Coast) Ltd.	Trucial Coast	Concessions on 6 Sheikhdoms
Petroleum Development (Oman and Dhofar) Ltd.	Oman and Dhofar	Concession

Standard Oil Company of California and the Texas Company which, as mentioned above have been joint equal owners of Arabian American Oil Company, and Trans-Arabian Pipe Line Company, are still equal owners of the Bahrein Petroleum Company, Ltd.

PRE-WAR CONSUMPTION OF PETROLEUM 1938

PERCENTAGE OF WORLD TOTAL



PER CAPITA CONSUMPTION OF PETROLEUM WORLD WIDE 1938

BARRELS
DAILY
5,000,000

4,000,000

3,000,000

2,000,000

1,000,000

In 1928 the individual owners of Iraq Petroleum Company entered into an agreement (so-called "red line" agreement) under which they committed themselves not to act independently "directly or indirectly in the production or manufacture of crude oil" within most of the area of the old Ottoman Empire. This agreement was believed to have been largely nullified by events of the war and steps are now being taken to modify it.

The concessionaire companies confine their direct activities almost entirely to the production and refining of oil within their respective spheres. The owners of the Iraq Petroleum Company have the right to take oil produced by that company according to the proportion owned by each. Likewise the present owners and prospective owners of Arabian American Oil Company have agreed to take crude oil and products from that Company. In both cases the individual owners compete against each other in the marketing of the oil and oil products. (In marketing outside the Western Hemisphere Standard of California and Texas Company operate jointly through the marketing subsidiary California-Texas Oil Company, Ltd., owned by Bahrein Petroleum Company, Ltd.)

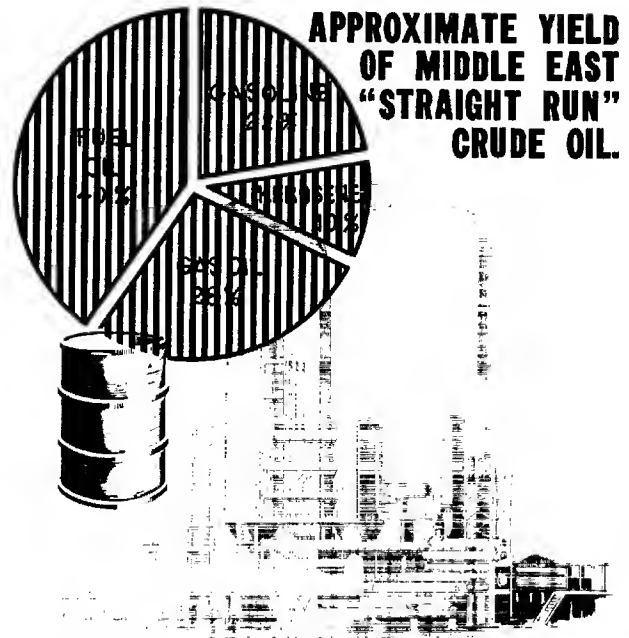
Characteristics of Middle East Crude Oil: Although the oil is produced from widely separated fields and from different geologic formations, the oils now produced in the Middle East are generally similar in type. They are generally comparable to the crude produced in west Texas. They contain sulphur (although of an inert type) and require stabilization for handling in tankers. In the major fields, they range from 32° to 38° A.P.I. gravity. Their yield on "straight run" is approximately as follows, with variations, of course, in individual crudes:

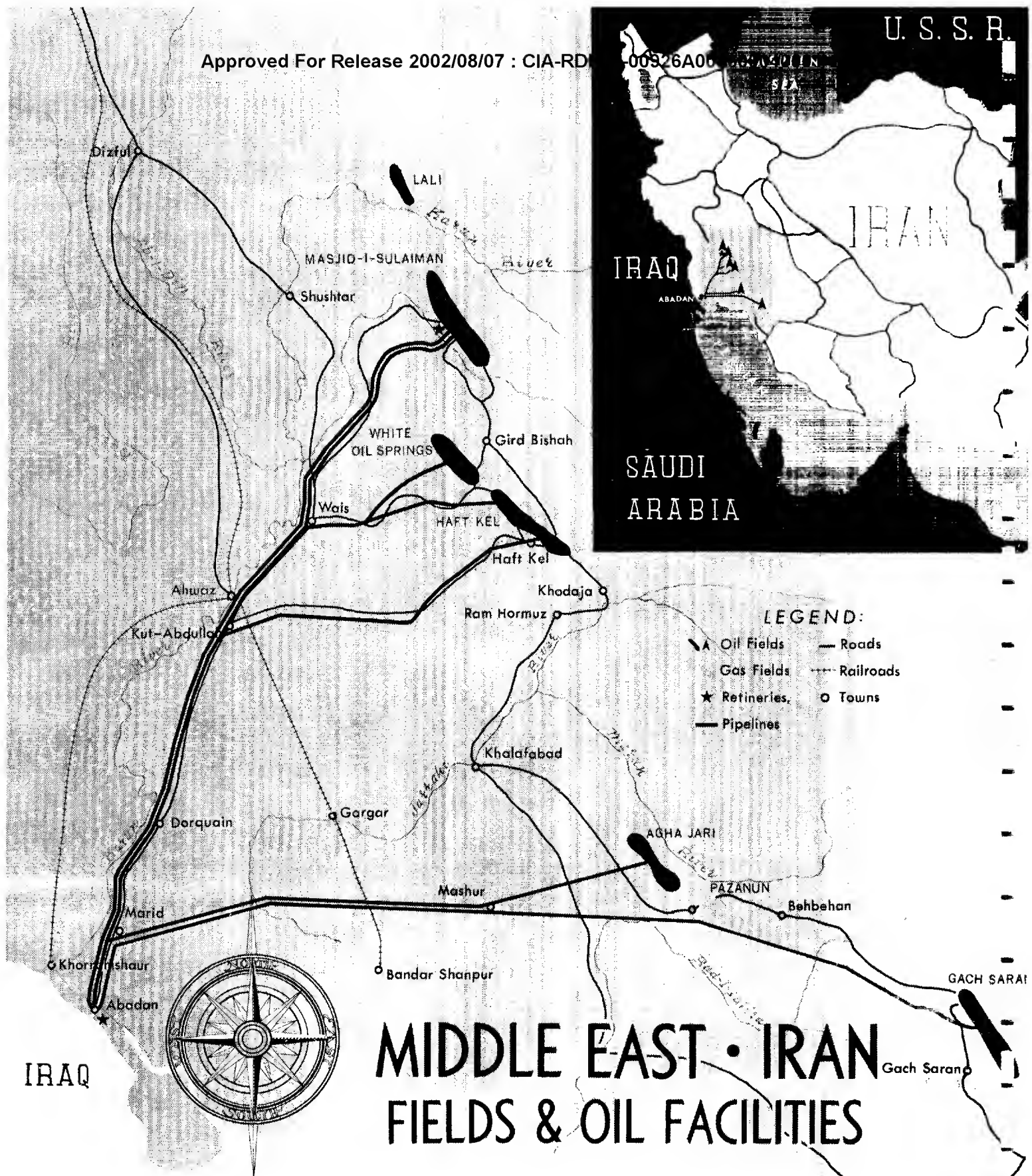
Gasoline	22 %
Kerosene	10 %
Gas Oil	28 %
Fuel Oil	40 %

The straight run gasoline is low in octane rating but can be easily improved up to standard by reforming, cracking and leading. The fuel oil has responded readily to cracking by both thermal and catalytic methods.

Some of the crudes contain good lubricating oil stock, but no lubes have been manufactured in the Middle East up to the present. The Anglo-Iranian Oil Company is now building a plant for this purpose at Abadan.

The oil so far discovered in the Mosul area in Iraq has been of low gravity (16°), and has not been produced or utilized to any large extent.





MIDDLE EAST • IRAN FIELDS & OIL FACILITIES

IRAN (SOUTHWEST)

SUMMARY OF DEVELOPMENTS

Concession: Original concession granted to William Knox D'Arcy in 1901 by Iranian Government.

Concession contract revised, May 29, 1933.

Area: 100,000 square miles.

Term: To December 31, 1993.

Holder: Anglo-Iranian Oil Company, Limited.

Nationality: British.

<u>Ownership:</u>	British Government	56%
	Burmah Oil Company, Ltd.	22%
	Public (Individuals)	22%

Oil Fields:

	<u>Year Discovered</u>	<u>Producing Wells</u>	<u>Daily Avg. Produc- tion End 1947</u>
Masjid-i-Sulaiman	1908	29	73,000
*Naft-i-Shah	1923	2	3,000
Haft Kel	1928	23	197,000
Gach Saran	1928/37	3	38,000
Naft Safid	1934/38	2	17,000
Agha Jari	1937/38	12	144,000
Pazanun	1937	Shut In	(gas field)
Total		71	472,000

A good well was completed in the Lali field in 1946 and this field should be contributing to current production after pipeline facilities are installed.

IRAN (SOUTHWEST) SUMMARY OF DEVELOPMENTS, *Continued*

Pipelines:

<u>From</u>	<u>To</u>	<u>Length</u> <u>Miles</u>	<u>Diameter</u>	<u>Capacity</u>	<u>Completed</u>
Masjid-i-Sulaiman	Abadan	133	10)		
Masjid-i-Sulaiman	Abadan	133	10)	80,000	1916-1927
Masjid-i-Sulaiman	Abadan	133	12)		
Haft-Kel	Abadan	136	12)		
Haft-Kel	Abadan	136	12)		
Haft-Kel	Marid	124	12)	205,000	1929-1938
Haft-Kel	Kut Abdullah	61	12)		
Naft Safid (White Oil Springs)	Wais	32	10-12)		
*Agha Jari	Abadan	97	12)	150,000	1945
Agha Jari	Bendur Mashur	45	12)	70,000	1946
Gach Saran	Abadan	166	12)	40,000	1940
Naft-i-Shah	Kermanshah	146	3)	2,600	1935

Refineries: The Company operates one of the largest refineries in the world at Abadan. It has a crude distillation capacity of about 500,000 barrels daily and handled a daily average of 446,000 barrels in December, 1947. It has a daily cracking capacity of 125,000 barrels, and facilities for manufacture of 100 octane gasoline, built during the war. Additions to the refinery are still under way, including a small lubricating oil plant, a catalytic cracking plant, and increased storage, pumping, water, steam and electrical facilities.

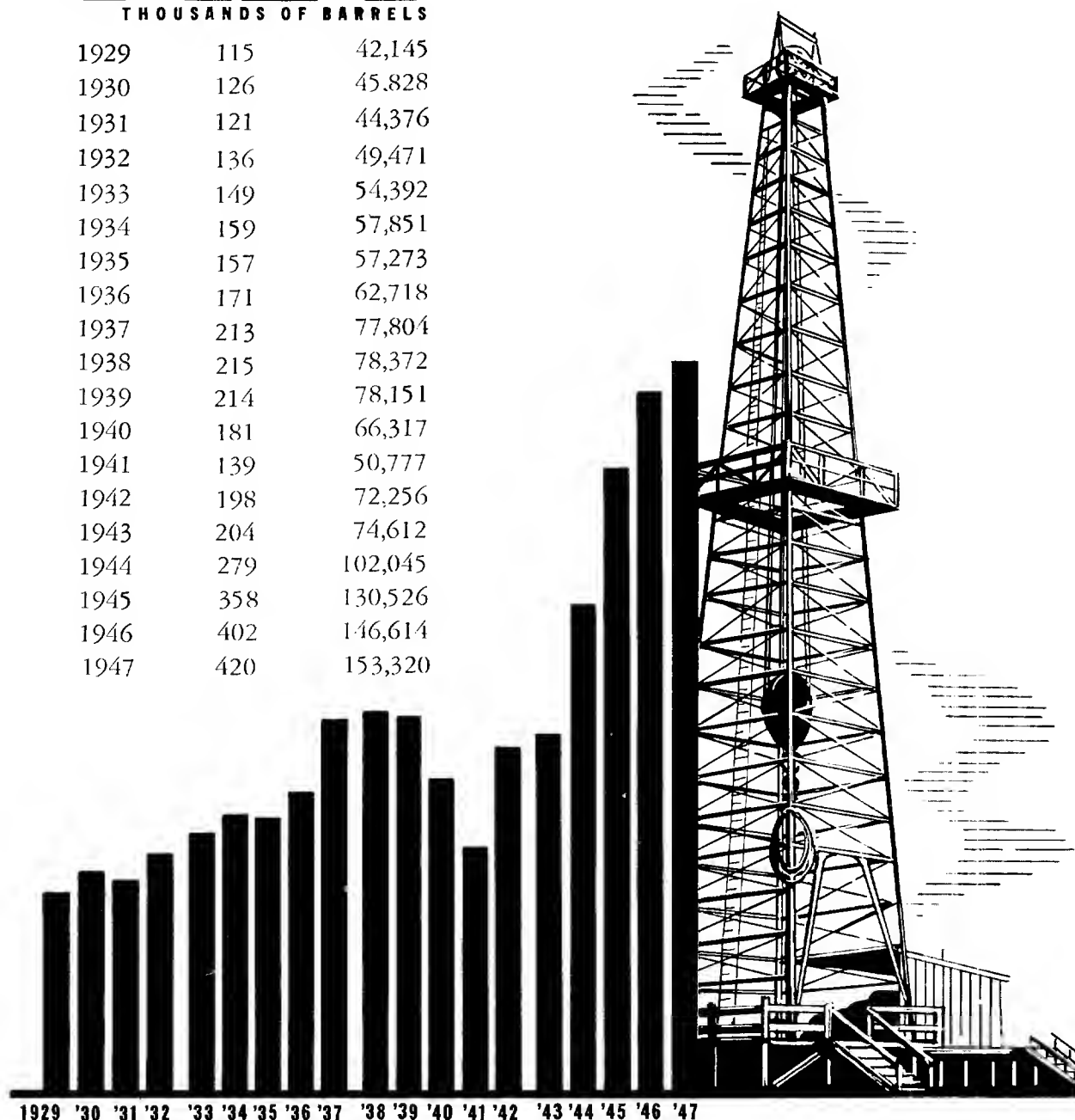
A subsidiary company, Kermanshah Petroleum Company, operates a small plant at Kermanshah, capacity 2100 barrels, on crude from the Naft-i-Shah field.

* Number of lines varies from two to four in the course of the route, the system being not yet complete.

PRODUCTION BY YEARS • IRAN

TOTAL PRODUCTION TO 1929 301,551,000 BARRELS

<u>YEAR</u>	<u>DAILY AVERAGE</u>	<u>TOTAL</u>
THOUSANDS OF BARRELS		
1929	115	42,145
1930	126	45,828
1931	121	44,376
1932	136	49,471
1933	149	54,392
1934	159	57,851
1935	157	57,273
1936	171	62,718
1937	213	77,804
1938	215	78,372
1939	214	78,151
1940	181	66,317
1941	139	50,777
1942	198	72,256
1943	204	74,612
1944	279	102,045
1945	358	130,526
1946	402	146,614
1947	420	153,320



TOTAL PRODUCTION THROUGH 1947 • 1,746,399,000 BARRELS

IRAN (SOUTHWEST) SUMMARY OF DEVELOPMENTS, *Continued*

Because of lack of previously established communities and its own large personnel requirements, the Company has had to provide housing and utilities for many of its employees not only in outlying field camps, but also in Abadan, where there is a Company-built city of about 125,000 inhabitants. The Company's investment in housing and other facilities for employees has about equalled its investment in wells and industrial equipment. During 1946 alone its investment in housing and utilities was over £2,800,000 (\$11,200,000) and a further £600,000 (\$2,400,000) was spent on schools, shopping centers, cinemas, work canteens, temporary accommodations, etc. during the year. This construction is continuing as rapidly as materials become available.

The Company provides hospitals and medical attention, schools and industrial training, and assists in higher education for those qualified. In 1946 it contributed £150,000 (\$600,000) to the University at Tehran for technical equipment to enlarge educational facilities.

In past years the Company has provided a number of free amenities to its employees in addition to salaries, i.e., housing, free rations and supplemental allowances for the high cost of living. Recently, however, wages have been raised to provide for these extra emoluments and employees are now required to pay their own housing and living costs. The change in policy was made to give the employees a better understanding of Company-employee relations and the management of their personal affairs.

IRAQ

SUMMARY OF DEVELOPMENTS

Concessions: The entire country of Iraq has been leased under three concessions held by three companies all having identical ownership and control, viz:

1. Districts of Mosul and Baghdad East of Tigris River

Granted to Iraq Petroleum Company, Ltd. (formerly Turkish Petroleum Co.) in 1925 as culmination of protracted international negotiations. It amounted to the revival and revival of a concession granted by the Ottoman Empire to British and German interests before World War I.

Term: 75 years from March 14, 1925.

2. West of Tigris River North of Lat. 33°.

Originally granted in 1932 to British Oil Development Company, an independent British group taken over some years later by the present owners. Name changed to Mosul Petroleum Company, Ltd.

Term: 75 years from May 25, 1932.

3. District of Basrah, etc. (southern Iraq)

Granted in 1938 to Basrah Petroleum Company, Ltd.

Term: 75 years from November 30, 1938.

Nationality of above companies: British

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TURKEY

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SYRIA

IRAN

TRANS JORDAN

SAUDI ARABIA



MIDDLE EAST • IRAQ

FIELDS & OIL FACILITIES

LEGEND:

Oil Fields
Refineries

Pipelines
Railroads

Towns
Roads

Proposed Pipelines

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IRAQ SUMMARY OF DEVELOPMENTS, *Continued*

Ownership of all three companies:

Anglo-Iranian Oil Company (British)	23.75 %
Compagnie Francaise des Petroles (French)	23.75 %
Royal Dutch-Shell (Dutch-British)	23.75 %
* Near East Development Co. (American)	23.75 %
** C. S. Gulbenkian	5.00 %

* Owned jointly by Standard Oil Company (New Jersey) and Socony-Vacuum Oil Co.

** An Armenian, now a British citizen, who figured largely in original Turkish Petroleum Company negotiations.

Production: The production from Iraq has thus far come from the, Kirkuk field in concession 1. Some heavy oil has been found in shallow wells in the Mosul area (in concession 2) but it has not been commercially developed except for minor local consumption.

Production from the Kirkuk field has been limited by the capacity of the 2 pipelines to the Mediterranean—about 92,000 barrels daily at the end of 1947. 31 producing wells and 48 observation wells had been completed. The wells are less than 3500 feet in depth. The field is very large and prolific and could produce considerably more. The A.P.I. gravity is 36°.

The oil fields in the Mosul (Qaiyarah) area are as follows:

<u>Field</u>	<u>Discovered</u>	<u>Wells Completed</u>	<u>A.P.I. Gravity</u>
Jawan	1933	5	16
Najmah	1933	22	16
Qaiyarah	1927	34	16
Qasab	1935	5	16

IRAQ SUMMARY OF DEVELOPMENTS, *Continued*

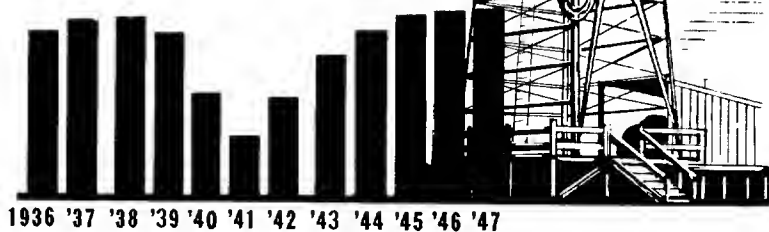
Some oil of better quality (32") was discovered in 1939 in the Ain Zalah field in the northern part of concession 2. Seven wells have been completed there at depths of 5000-6000 feet, but so far no oil has been shipped from this comparatively remote area. Further drilling is now in progress. Test drilling is also under way in the Basrah area (Concession 3).

IRAQ • PRODUCTION FROM KIRKUK FIELD

<u>YEAR</u>	<u>DAILY AVERAGE</u>	<u>TOTAL</u>
THOUSANDS OF BARRELS		
1936	81	29,748
1937	86	31,447
1938	87	31,648
1939	79	28,963
1940	49	17,882
1941	29	10,502
1942	48	17,437
1943	69	25,376
1944	82	29,875
1945	90	32,996
1946	92	33,438
1947	92	33,494

[19]

PRODUCTION
PRIOR TO 1936
36,492,000 BARRELS



TOTAL PRODUCTION THROUGH 1947 • 359,298,000 BARRELS

IRAQ SUMMARY OF DEVELOPMENTS, *Continued*

Pipelines: There are two 12-inch pipelines from the Kirkuk field to the Mediterranean coast, one terminating at Haifa, Palestine, the other at Tripoli. The Kirkuk-Haifa line is 621 miles, and the Kirkuk-Tripoli line 532 miles, in length.

Construction of duplicating 16 inch lines is now under way, but progress is governed by the availability of steel pipe being fabricated in England. The Haifa line is expected to be completed in 1949, the Tripoli line in 1951.

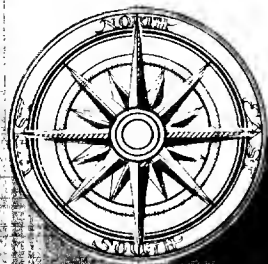
In addition to the operations of the Iraq Petroleum Company, the Khanaqin Oil Company (owned by the Anglo-Iranian Oil Company) produces oil in the Naft Khaneh field in eastern Iraq. From this field there is a pipeline to a company-owned refinery at Khanaqin, of 6500 barrels daily capacity.

Refineries: The I.P.C. has a stabilization plant at Kirkuk which was used as a topping plant during the war. Except for this and the Khanaqin plant, mentioned above, there are no refineries in Iraq.

The Consolidated Refineries, Limited, jointly owned by Anglo-Iranian and Anglo-Saxon Petroleum Company (Shell group) operates a refinery of about 90,000 barrels daily capacity at Haifa, where most of the oil from the Kirkuk field is presently being refined. It is intended in the future to double the capacity of this plant and to install lubricating oil manufacturing facilities.

The Iraq Petroleum Company owns a small refinery at Tripoli which has been shut down since the early part of the war. The American interests in the same group have announced plans for the building of an additional refinery at this point.

IRAQ



AST • KUWAIT FACILITIES

KUWAIT

SUMMARY OF DEVELOPMENTS

Concession: Granted by Sheikh of Kuwait to Kuwait Oil Company, Ltd. in 1934.

Area: about 6,000 square miles.

Term: 75 years from December 23, 1934.

Nationality of Company: British.

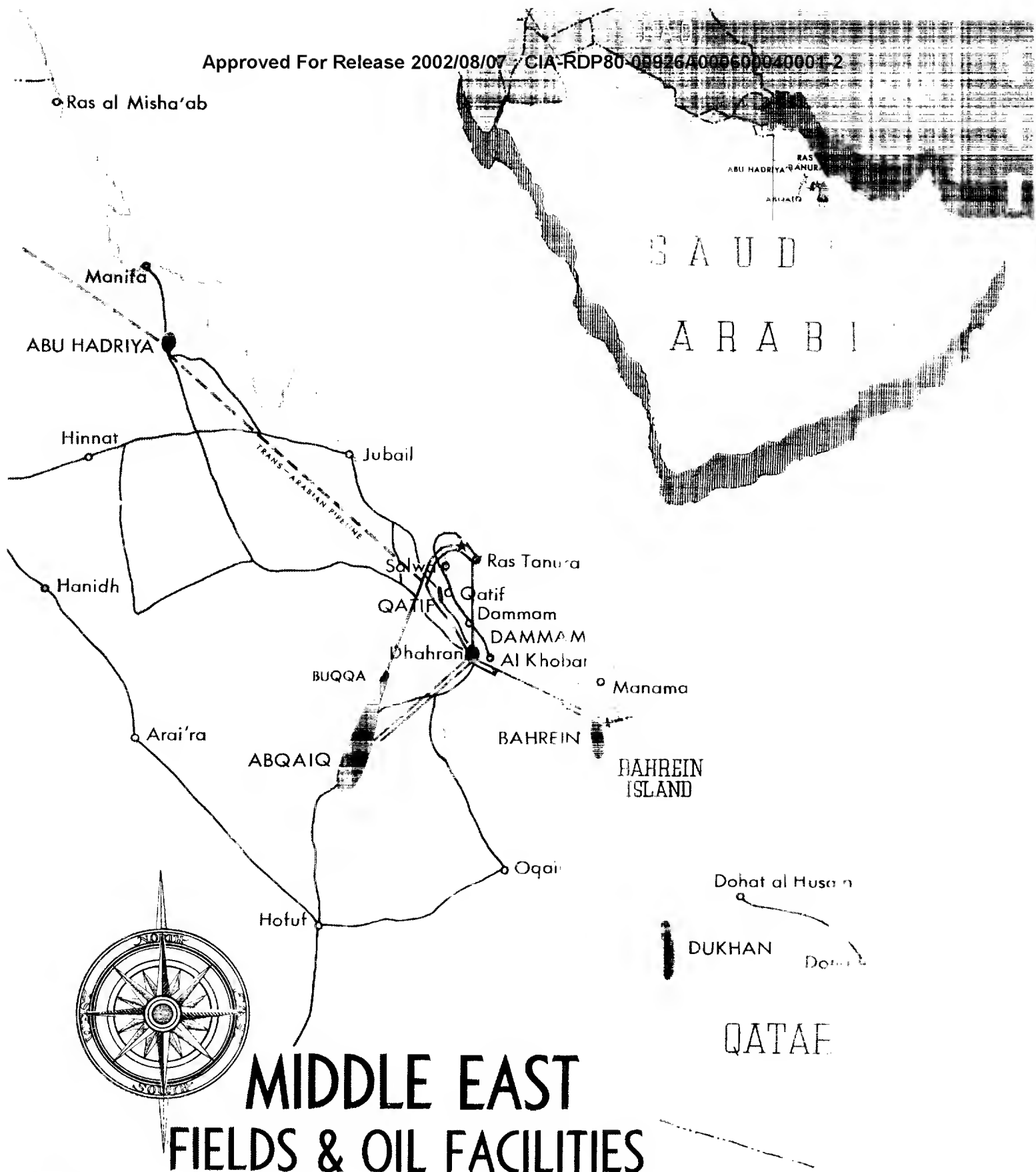
<u>Ownership:</u>	Anglo-Iranian Oil Company (British)	50%
	Gulf Exploration Company (American)	50%

Production: The Burghan field, discovered in 1938 at a depth of about 3700 feet, is one of the largest single oil fields in the world, if not the largest. It is believed to contain reserves of about 9 billion barrels.

Operations were practically discontinued during the war, but have been actively revived during 1946 and 1947.

A field gathering system, pipeline to the nearby coast and oil shipping terminal have been constructed. Crude oil shipments to Europe were commenced in June 1946, and are now running at the rate of about 100,000 barrels a day. At the end of 1947 there were 13 wells on production and five drilling rigs in operation. The field produced 5,931,000 barrels in 1946, 17,850,000 in 1947.

The potential productive capacity of the field cannot be fully utilized until additional outlets are developed. It is proposed in the future to tie Kuwait production into a pipeline to be constructed from Iran to the Mediterranean by Anglo-Iranian Oil Company, Standard Oil Company (New Jersey), and Socony-Vacuum Oil Company. There is also a plan for an additional pipeline to the Mediterranean to be built jointly by Gulf Oil and the Shell group.



MIDDLE EAST FIELDS & OIL FACILITIES SAUDI ARABIA, BAHREIN & QATAR

LEGEND:



Oil Fields



Refineries

Pipelines

Roads



Towns



Proposed Pipelines

SAUDI ARABIA

SUMMARY OF DEVELOPMENTS

Concessions: Original concession granted to Standard Oil Company of California May 29, 1933 which was augmented in May, 1939. Assigned to and now held by Arabian American Oil Company.

Area: 440,000 square miles, more or less.

Term: To July 14, 1999, (supplemental area to July 21, 2005)

Nationality of Company: American

Ownership: Until present, owned jointly by Standard Oil Company of California and Texas Company. Under recent negotiations which require certain formalities to be completed, the ownership will be:

Standard of California	30%
Texas Company	30%
Standard of New Jersey	30%
Socony-Vacuum Oil Co.	10%

Exploration was commenced in September, 1933, and test drilling in 1934. However, results were discouraging until the finding of commercial production in the Dammam field in 1938.

SAUDI ARABIA SUMMARY OF DEVELOPMENTS, *Continued*Oil fields: (Status at end of 1947)

<u>Field</u>	<u>Year Discovered</u>	<u>Completed Oil Wells</u>	<u>Producing Wells</u>	<u>Daily Average Production</u>
Dammam	1938	33	32	100,000
Abqaiq	1941	28*	18	200,000
Abu Hadriya	1940	1	0	<u>Shut in</u>
Qatif	1945	2	1	<u>5,000</u>
		Total		305,00

* Includes 3 wells in so-called "Buqqa" area, now shut in. This area, in which oil was discovered in 1947, has proved to be an extension of the Abqaiq Field.

Pipelines: (status middle 1948)

<u>From</u>	<u>To</u>	<u>Completed</u>	<u>Size</u>	<u>Daily Capacity</u>	<u>Length Miles</u>
Dhahran	Ras Tanura Refinery	1939	10"	63,000	33
Dhahran	Ras Tanura Terminal	1946	12"	123,000	23
Dhahran	Bahrein	1945	12" plus land loops	117,00	34
Abqaiq	Dhahran	1946	12"-14"	100,000	40
Abqaiq	Dhahran	1947	14"	105,000	40
Abqaiq	Ras Tanura Refinery	1948	30-20-22"	326,000	61

Work has also commenced on an 1100-mile 30-31 inch pipeline from the Abqaiq field to the Mediterranean, which will have a capacity of 300,000 barrels daily when completed in 1949. This is being built by Trans-Arabian Pipe Line Company, an American company owned by the same group.

Refineries: Aramco has one refinery located on Ras Tanura Peninsula. (A 3,000 barrel plant completed in 1940 has been abandoned.) Built as a military project in 1943-1945 with an estimated capacity of 50,000 barrels daily, the refinery is actually running over 115,000 per calendar day. This has been made possible largely by augmenting pumping and charging equipment. A large part of the output is being taken by the United States Navy.

SAUDI ARABIA SUMMARY OF DEVELOPMENTS, *Continued*

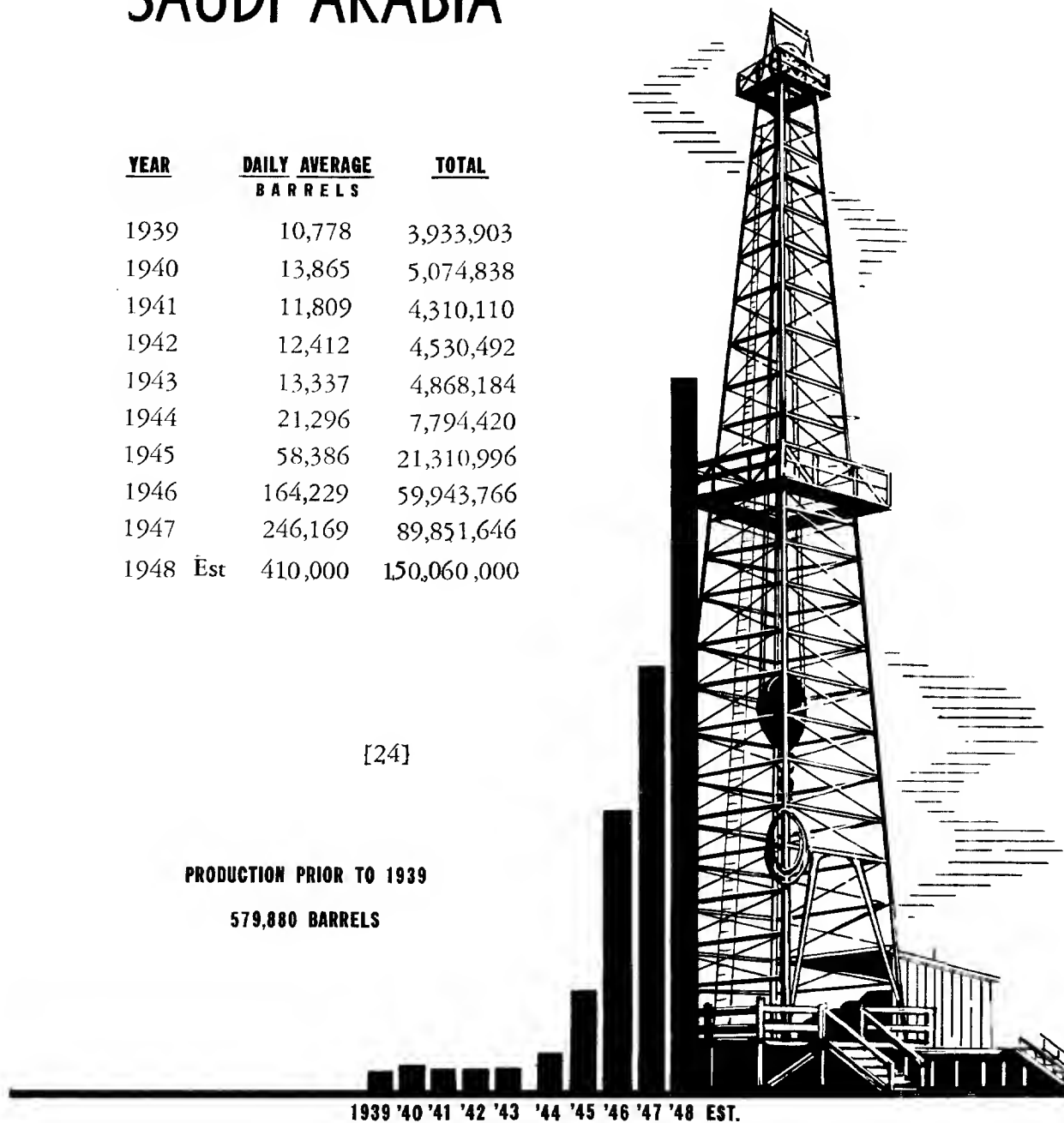
PRODUCTION BY YEARS. SAUDI ARABIA

<u>YEAR</u>	<u>DAILY AVERAGE BARRELS</u>	<u>TOTAL</u>
1939	10,778	3,933,903
1940	13,865	5,074,838
1941	11,809	4,310,110
1942	12,412	4,530,492
1943	13,337	4,868,184
1944	21,296	7,794,420
1945	58,386	21,310,996
1946	164,229	59,943,766
1947	246,169	89,851,646
1948 Est	410,000	150,060,000

[24]

PRODUCTION PRIOR TO 1939

579,880 BARRELS



TOTAL PRODUCTION THROUGH 1947 • 202,198,235 BARRELS

SAUDI ARABIA SUMMARY OF DEVELOPMENTS, *Continued*

RELATIONS WITH GOVERNMENT AND PEOPLE

Aramco employs upwards of 15,000 Saudi Arabs and its local payroll presently runs in the neighborhood of \$1,500,000 per month. The majority are unskilled laborers. Starting rates of pay for this group have increased from less than 1 riyal (30c) per day in 1934 to 3 riyals (90c) at present. Rewards are given for continuity of service and higher wage rates are, of course, paid according to degrees of skill acquired before, or during the course of, employment by the Company.

While these rates are far below those paid in western countries, local labor is not "cheap" in terms of productivity and performance. Entering a country whose mode of life had changed little, if any, since Biblical times, Aramco has had to teach its local workers the simplest tasks. The training of skilled workers has been proceeding with good success, but will require considerably more time before the number so trained meets requirements. In addition to industrial training, the Company has for several years operated primary schools for employees and their children. As in the case of the Anglo-Iranian Oil Company, Aramco has had to construct housing for its Arab as well as American employees, and the development and improvement of local communities in which employees and their families live presents a long-range and large-scale problem with which the Company feels natural concern and is prepared in all reasonable ways to assist. Now under way is the construction of a 7-mile railroad pier to deep water and other port facilities at the town of Dammam, and of a railroad from that point to Dhahran and Abqaiq. This will result in the establishment of an important public port on the Persian Gulf coast and the development of a comparatively large community there. The present construction, although being financed and supervised by the Company, is being undertaken as a governmental project, and the King has hopes of having the railroad extended eventually 350 miles inland to the capital city, Riyadh.

SAUDI ARABIA SUMMARY OF DEVELOPMENTS, *Continued*

The Company also has introduced and maintains modern hospitals and health centers in the area of its operations.

Its relations with the government and employees have at all times remained harmonious, and great care is exercised in the formulation and administration of policies which will maintain mutual respect, confidence and fair dealing.

The Company has given technical assistance to the government in many local problems, including the supervision, by Company engineers, of the construction of a fairly large agricultural project at Al Kharj, southeast of Riyadh. It is presently sponsoring a group of American agriculturalists for the application of improved farming methods in the country.

During the war, when the great reduction in revenues from pilgrim traffic and other sources placed the government in financial difficulties, the Company assisted it with advances from time to time, the total of which exceeded \$10,000,000.

BAHREIN

SUMMARY OF DEVELOPMENTS

Concession: Originally granted in 1925 to Eastern and General Syndicate, an independent English group.
Assigned to Bahrein Petroleum Company, Ltd., in 1930, after obtaining approval of British Government.

Area: Original concession contemplating mining lease of 100,00 acres has been extended to cover entire Bahrein Archipelago.

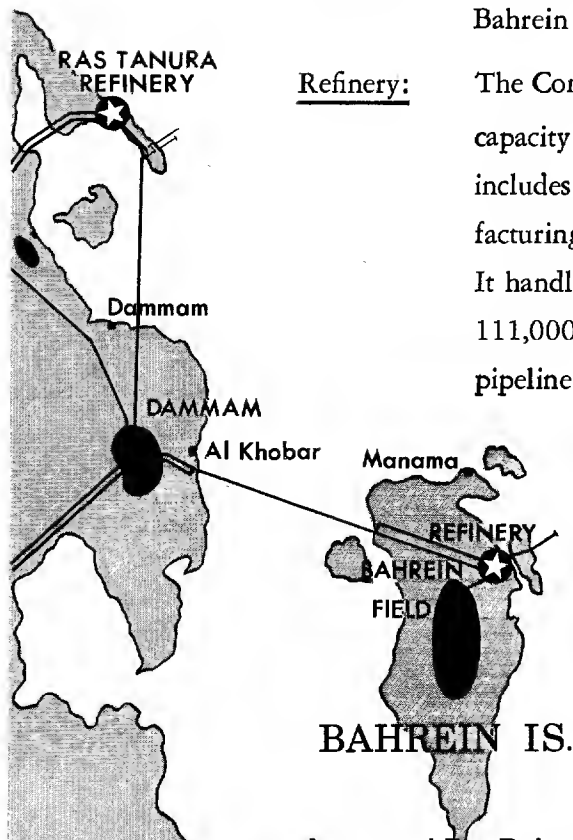
Term: 55 years from June 19, 1940.

Nationality of Company: Canadian.

<u>Ownership:</u>	Standard Oil Company of California	50%
	Texas Company	50%

Oil Field: Only one field has been discovered, in central portion of Bahrein Island. 66 wells were producing as of January 1, 1948.

Refinery: The Company operates a refinery of about 146,000 barrels daily capacity only a few miles from the oil field. The refinery includes thermal and catalytic cracking, aviation gasoline manufacturing facilities, SO₂ plant, asphalt plant, etc.
It handles 30,000 to 35,000 barrels daily of Bahrein crude, and 111,000 to 116,000 barrels of crude transported by submarine pipeline from Dhahran, Saudi Arabia.



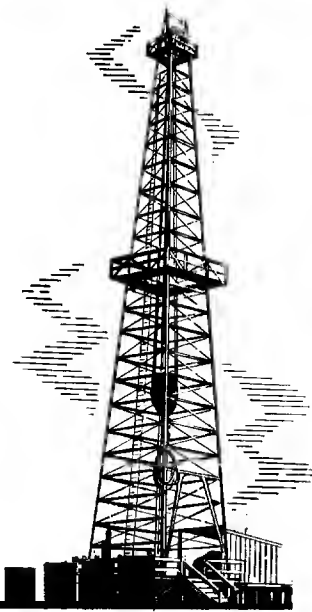
Bahrein SUMMARY OF DEVELOPMENTS, *Continued*

BAHREIN • PRODUCTION BY YEARS

<u>YEAR</u>	<u>DAILY AVERAGE</u>	<u>TOTAL</u>
THOUSANDS OF BARRELS		
1936	13	4,645
1937	21	7,762
1938	23	8,298
1939	21	7,588
1940	20	7,074
1941	18	6,794
1942	17	6,240
1943	18	6,572
1944	19	6,714
1945	20	7,309
1946	22	8,010
1947	25	9,411

PRODUCTION
PRIOR TO 1936
1,582,000 BARRELS

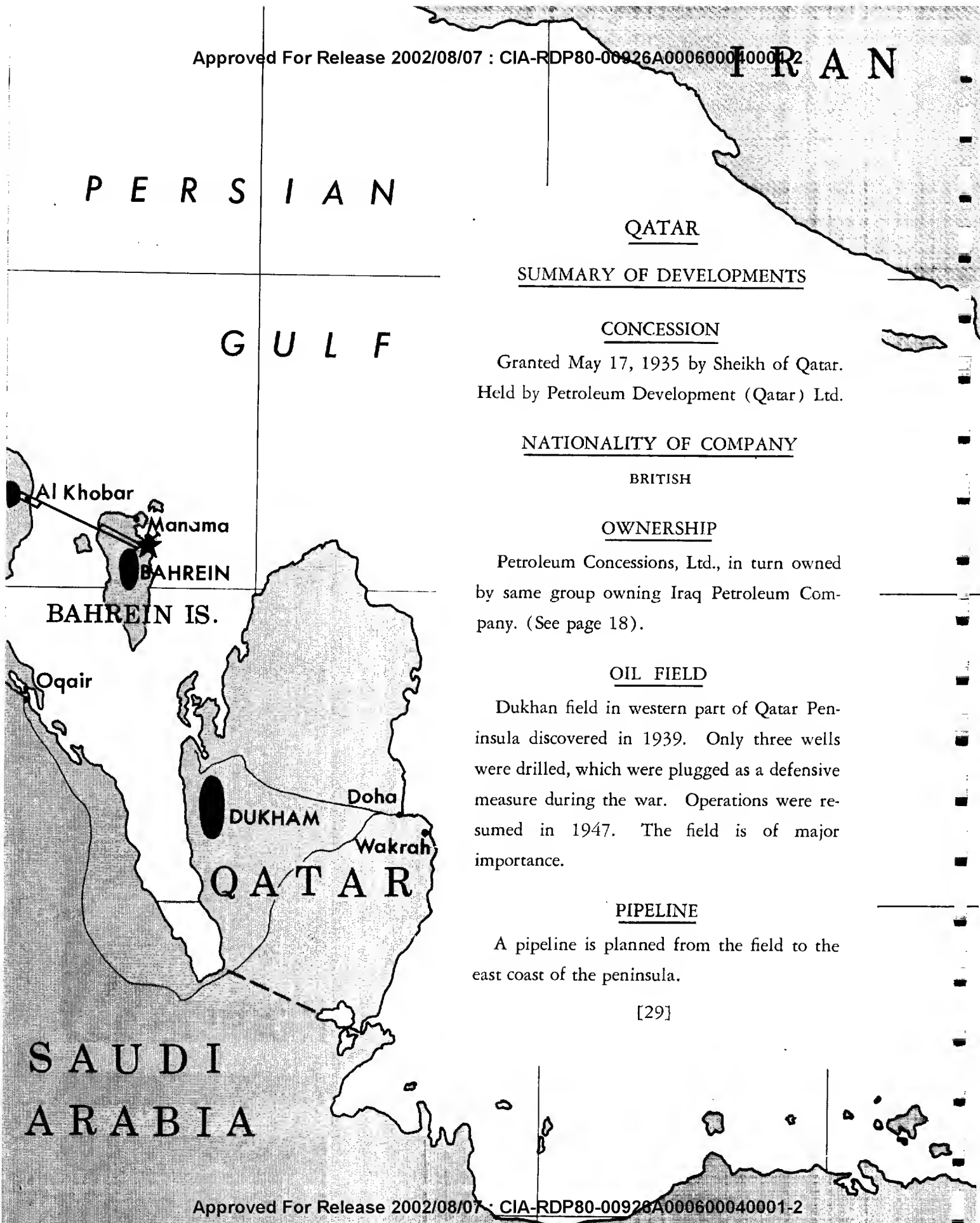
1936 '37 '38 '39 '40 '41 '42 '43 '44 '45 '46 '47



TOTAL PRODUCTION THROUGH 1947 • 84,999,000 BARRELS

Production during the first quarter of 1948 totalled 2,668,000 barrels, a daily average of 29,000.

As in the case of the other oil companies, Bapco has made notable progress in the training and education of its Bahrein employees, numbering nearly 6,000, and has introduced free medical care in its modern well-equipped hospitals, as well as other employee benefits. The company's relations with the Government and people of Bahrein have at all times been harmonious.



IRAN

P E R S I A N

G U L F

QATAR

SUMMARY OF DEVELOPMENTS

CONCESSION

Granted May 17, 1935 by Sheikh of Qatar.
Held by Petroleum Development (Qatar) Ltd.

NATIONALITY OF COMPANY

BRITISH

OWNERSHIP

Petroleum Concessions, Ltd., in turn owned
by same group owning Iraq Petroleum Com-
pany. (See page 18).

OIL FIELD

Dukhan field in western part of Qatar Pen-
insula discovered in 1939. Only three wells
were drilled, which were plugged as a defensive
measure during the war. Operations were re-
sumed in 1947. The field is of major
importance.

PIPELINE

A pipeline is planned from the field to the
east coast of the peninsula.

[29]

SAUDI
ARABIA

EXPLANATION OF API GRAVITY AND CONVERSION TABLE,
BARRELS TO TONS, FOR OIL OF GRAVITY 25° API to 40° API

The index of specific gravity used in the petroleum industry in the United States, is expressed in degrees API. It is based on a ratio between the weight of equal volumes of oil and water. For ease in conversion the API index is commonly calculated for oil at 60° F temperature. The following table is based on this standard temperature.

Degrees <u>A.P.I.</u>	Pounds per <u>Gallon</u>	Pounds per 42 gal. <u>barrel</u>	Barrels per <u>ton *</u>
25	7.529	316.2	7.07
26	7.481	314.2	7.12
27	7.434	312.2	7.17
28	7.387	310.3	7.22
29	7.341	308.3	7.28
30	7.296	306.4	7.33
31	7.251	304.5	7.37
32	7.206	302.7	7.42
33	7.163	300.8	7.46
34	7.119	299.0	7.50
35	7.076	297.2	7.54
36	7.034	295.4	7.59
37	6.993	293.7	7.63
38	6.951	301.9	7.67
39	6.910	290.2	7.71
40	6.870	288.5	7.76

* In contrast to the practice in the United States, when crude oil is measured in barrels of 42 U. S. gallons, the unit of measurement under Middle East oil concessions is usually the "ton," i.e., the English ton of 2240 pounds.

1 **PETROLEUM DEVELOPMENT LTD. (CYPRUS)**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD. EXPLORATION PERMIT ONLY

2 **TRANS-JORDAN PETROLEUM CO., LTD.**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD.

3 **LEBANON PETROLEUM COMPANY, LTD.**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD. EXPLORATION PERMIT ONLY

4 **PETROLEUM DEVELOPMENT, LTD. (PALESTINE)**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD. EXPLORATION PERMIT ONLY

5 **PETROLEUM CONCESSIONS, LTD.**
EXPLORATION PERMIT ONLY

6 **PETROLEUM DEVELOPMENT, LTD. (OMAN & DHOFAR)**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD.

7 **PETROLEUM DEVELOPMENT, LTD. (TRUCIAL COAST)**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD. CONCESSIONS AND ONE EXPL. PERMIT

8 **PETROLEUM DEVELOPMENT (QATAR) LTD.**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD. EXPIRES 2011

9 **SYRIA PETROLEUM COMPANY, LTD.**
SUBSIDIARY OF PETROLEUM CONCESSIONS, LTD.

10 **MOSUL PETROLEUM CO., LTD.**
CONCESSION:
TERM—25 YEARS FROM JULY 1, 1932
AREA—ALL OF IRAQ WEST OF THE TIGRIS RIVER AND NORTH OF 34° LATITUDE
APPROXIMATELY 40,000 SQ. MILES
EXPIRES 1954

11 **BASRAH PETROLEUM CO., LTD.**
CONCESSION:
TERM—75 YEARS FROM DEC. 4, 1932
AREA—ALL OF IRAQ NOT COVERED BY I.P.C. & R.O.O. CONCESSIONS
EXPIRES 1912

12 **IRAQ PETROLEUM COMPANY** For Release 2002/08/07 : CIA-RDP80-00926A000600040001-2
CONCESSION:
TERM—75 YEARS FROM MARCH 14, 1932
AREA—PROVINCES OF BAGHDAD AND MOSUL EAST OF THE TIGRIS RIVER
EXPIRES 1998
OWNERSHIP:
SHELL OIL COMPANY 52.75%
ANGLO-IRANIAN OIL CO., LTD. 52.75%
C.I.E. FRANCAISE DES PETROLES 52.75%
STANDARD OIL CO. (NEW JERSEY) 11.875%
SOCOBY-VACUUM OIL CO., INC. 11.875%
PRIVATE INTEREST (C.I. GULRENNIAN) 5 %
1M %

13 **ANGLO-IRANIAN OIL COMPANY, LTD.**
CONCESSION:
TERM—99 YEARS FROM DEC. 31, 1932
AREA—100,000 SQ. MILES
OWNERSHIP:
BRITISH GOVERNMENT 55%
BURMAN OIL CO. 22%
OTHER INDIVIDUALS 23%

14 **KHANAQIN PETROLEUM COMPANY**
OWNERSHIP
ANGLO-IRANIAN OIL CO. LTD.

15 **KUWAIT OIL COMPANY, LTD.**
CONCESSION:
TERM—99 YEARS FROM DEC. 31, 1932
AREA—ALL OF KUWAIT
EXPIRES 2011
OWNERSHIP
ANGLO-IRANIAN OIL CO. LTD. 55%
GULF EXPLORATION COMPANY 55%
100%

16 **ARABIAN AMERICAN OIL COMPANY**
CONCESSION:
TERM—ORIGINAL AREA—66 YEARS FROM JULY 1, 1932
ADDITIONAL AREA—66 YEARS FROM JULY 1, 1952
AREA—APPROXIMATELY 20,000 SQ. MILES
EXPIRES 1998

17 **BAHRAIN PETROLEUM COMPANY, LTD.**
CONCESSION:
TERM—31 YEARS FROM JUNE 15, 1932
AREA—ALL OF BAHRAIN
EXPIRES 1963



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